

WHAT IS CLAIMED IS:

1. A heat exchanger comprising:
an air flow structure that has a top surface, a bottom surface, a
5 width, a length, a first edge that runs along the width, a second edge
that runs along the width, a plurality of first grooves in the top surface,
and a plurality of second grooves in the bottom surface, the first and
second grooves extending along the length between the first and second
edges, a groove having a substantially uniform width from the first edge
10 to the second edge;
a plurality of first walls connected to the air flow structure, each
first wall extending from a section on a first side of a first groove to a
section on a second opposing side of the first groove; and
a plurality of second walls connected to the air flow structure,
15 each second wall extending from a section on a first side of a second
groove to a section on a second opposing side of the second groove.
2. The heat exchanger of claim 1 wherein a first wall and a
first groove have substantially equal widths.
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3. The heat exchanger of claim 1 and further comprising a
first plate formed adjacent to the top surface, the first plate contacting
the plurality of first walls, the first plate having a first opening and a
second opening spaced apart from the first opening, the first opening
25 exposing portions of the first grooves.
4. The heat exchanger of claim 3 wherein the first plate
contacts the top surface.

5. The heat exchanger of claim 2 wherein a second wall and a second groove have substantially equal widths.

6. The heat exchanger of claim 3 and further comprising a second plate formed adjacent to the bottom surface, the second plate contacting the plurality of second walls, the second plate having a third opening and a fourth opening spaced apart from the third opening, the third opening exposing portions of the second grooves.

7. The heat exchanger of claim 6 wherein the second plate contacts the bottom surface.

8. The heat exchanger of claim 6 wherein the second plate includes a base section and sidewalls that extend perpendicularly away from the base section.

9. The heat exchanger of claim 8 and further comprising a first air flow generator connected to the second plate adjacent to the second opening, the first air flow generator causing air to follow a path through the first opening along the first grooves and through the second opening.

10. The heat exchanger of claim 8 and further comprising a first air flow generator connected to the first plate adjacent to the second opening, the first air flow generator causing air to follow a path through the first opening along the first grooves and through the second opening.

11. The heat exchanger of claim 9 and further comprising a second air flow generator connected to the first plate adjacent to the fourth opening, the second air flow generator causing air to follow a path through the third opening along the second grooves and through
5 the fourth opening.

12. The heat exchanger of claim 9 and further comprising a second air flow generator connected to the second plate adjacent to the fourth opening, the second air flow generator causing air to follow a
10 path through the third opening along the second grooves and through the fourth opening.

13. The heat exchanger of claim 1 wherein a first groove and a second groove share a section of the structure.
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14. The heat exchanger of claim 1 wherein the first walls include an elastomer.

15. The heat exchanger of claim 14 wherein the elastomer
20 includes silicon rubber.

16. The heat exchanger of claim 1 wherein the first walls include plastic.

25 17. A method of forming a heat exchanger, the method comprising the steps of:

forming an air flow structure that has a top surface, a bottom surface, a width, a length, a first edge that runs along the width, a second edge that runs along the width, a plurality of first grooves in the

top surface, and a plurality of second grooves in the bottom surface, the first and second grooves extending along the length between the first and second edges, each groove having a substantially uniform width from the first edge to the second edge; and

5 forming a plurality of first walls connected to the air flow structure, each first wall extending from a section on a first side of a first groove to a section on a second opposing side of the first groove, a first wall and groove having substantially equal widths.

10 18. The method of claim 17 wherein the forming a plurality of first walls includes the steps of:

 placing the first edge in a mold;

 introducing an elastomer into the mold;

 curing the elastomer such that a wall is formed to close each of

15 the first and second grooves along first edge; and

 removing the walls that close off the second grooves at the first edge.

 19. The method of claim 17 wherein the forming a plurality of first walls includes the steps of:

 forming a plurality of wall sections;

 applying an adhesive to the wall sections;

 placing the wall sections in the first grooves at the first edge.

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